

MBRB2545CT

Preferred Device

SWITCHMODE™ Power Rectifier

D²PAK Surface Mount Power Package

The D²PAK Power Rectifier employs the Schottky Barrier principle with a platinum barrier metal. These state-of-the-art devices have the following features:

- Center-Tap Configuration
- Guardring for Stress Protection
- Low Forward Voltage
- 150°C Operating Junction Temperature
- Epoxy Meets UL94, VO at 1/8"
- Short Heat Sink Tab Manufactured — Not Sheared!
- Similar in Size to the Industry Standard TO-220 Package

Mechanical Characteristics

- Case: Epoxy, Molded, Epoxy Meets UL94, VO
- Weight: 1.7 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 50 units per plastic tube
- Available in 24 mm Tape and Reel, 800 units per 13" reel by adding a "T4" suffix to the part number
- Marking: B2545
- Device Meets MSL1 Requirements
- ESD Ratings: Machine Model, C (>400 V)
Human Body Model, 3B (>8000 V)

MAXIMUM RATINGS (Per Leg)

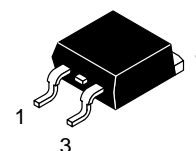
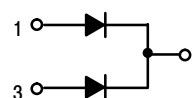
Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	45	V
Average Rectified Forward Current (Rated V_R , $T_C = 130^\circ\text{C}$) Total Device	$I_{F(AV)}$	15 30	A
Peak Repetitive Forward Current (Rated V_R , Square Wave, 20 kHz, $T_C = 130^\circ\text{C}$)	I_{FRM}	30	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	150	A
Peak Repetitive Reverse Surge Current (2.0 μs , 1.0 kHz)	I_{RRM}	1.0	A
Storage Temperature Range	T_{stg}	-65 to +175	°C
Operating Junction Temperature	T_J	-65 to +150	°C
Voltage Rate of Change (Rated V_R)	dv/dt	10,000	V/ μs



ON Semiconductor®

<http://onsemi.com>

SCHOTTKY BARRIER RECTIFIER 30 AMPERES 45 VOLTS



D²PAK
CASE 418B
STYLE 3

MARKING DIAGRAM



B2545 = Device Code

ORDERING INFORMATION

Device	Package	Shipping†
MBRB2545CT	D ² PAK	50/Rail
MBRB2545CTT4	D ² PAK	800/Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

Preferred devices are recommended choices for future use and best overall value.

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THERMAL CHARACTERISTICS (Per Leg)

Characteristic	Symbol	Value	Unit
Thermal Resistance — Junction to Case	$R_{\theta JC}$	1.5	$^{\circ}C/W$
— Junction to Ambient (Note 1.)	$R_{\theta JA}$	50	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS (Per Leg)

Maximum Instantaneous Forward Voltage (Note 2.) ($i_F = 30$ Amps, $T_J = 125^{\circ}C$) ($i_F = 30$ Amps, $T_J = 25^{\circ}C$)	V_F	0.73 0.82	Volts
Maximum Instantaneous Reverse Current (Note 2.) (Rated dc Voltage, $T_J = 125^{\circ}C$) (Rated dc Voltage, $T_J = 25^{\circ}C$)	i_R	40 0.2	mA

- When mounted using minimum recommended pad size on FR-4 board.
- Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

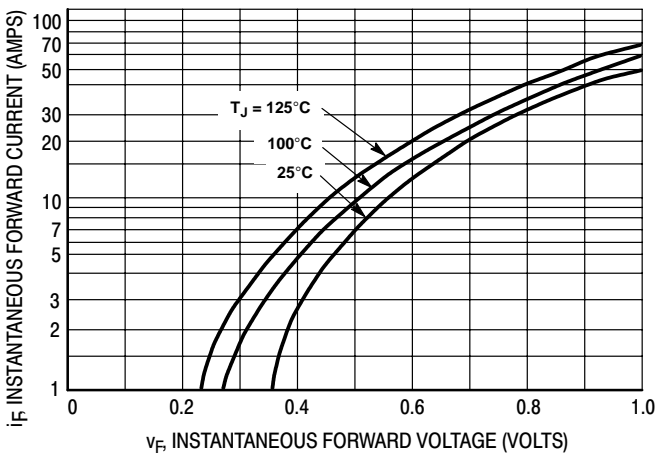


Figure 1. Typical Forward Voltage, Per Leg

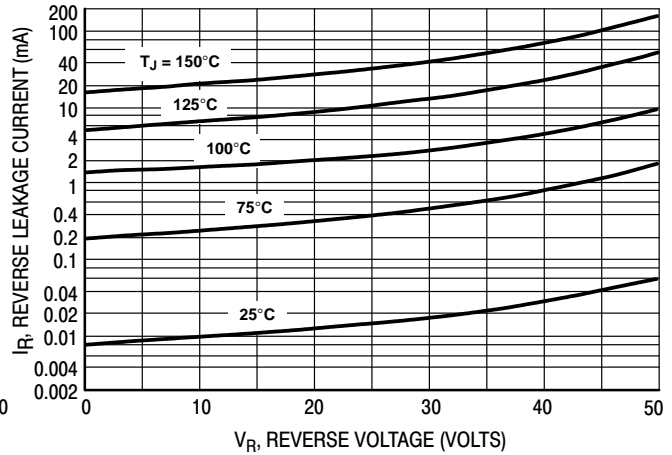


Figure 2. Typical Reverse Current, Per Leg

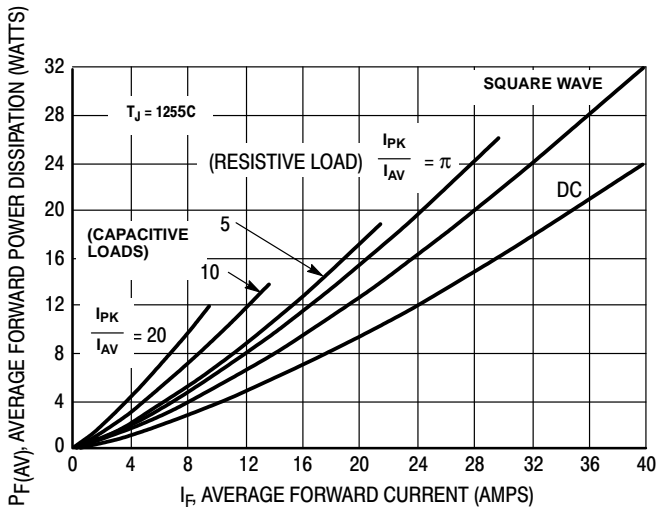


Figure 3. Typical Forward Power Dissipation

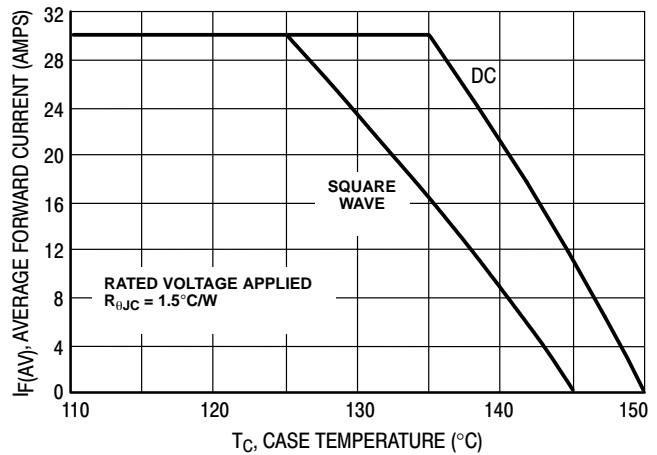
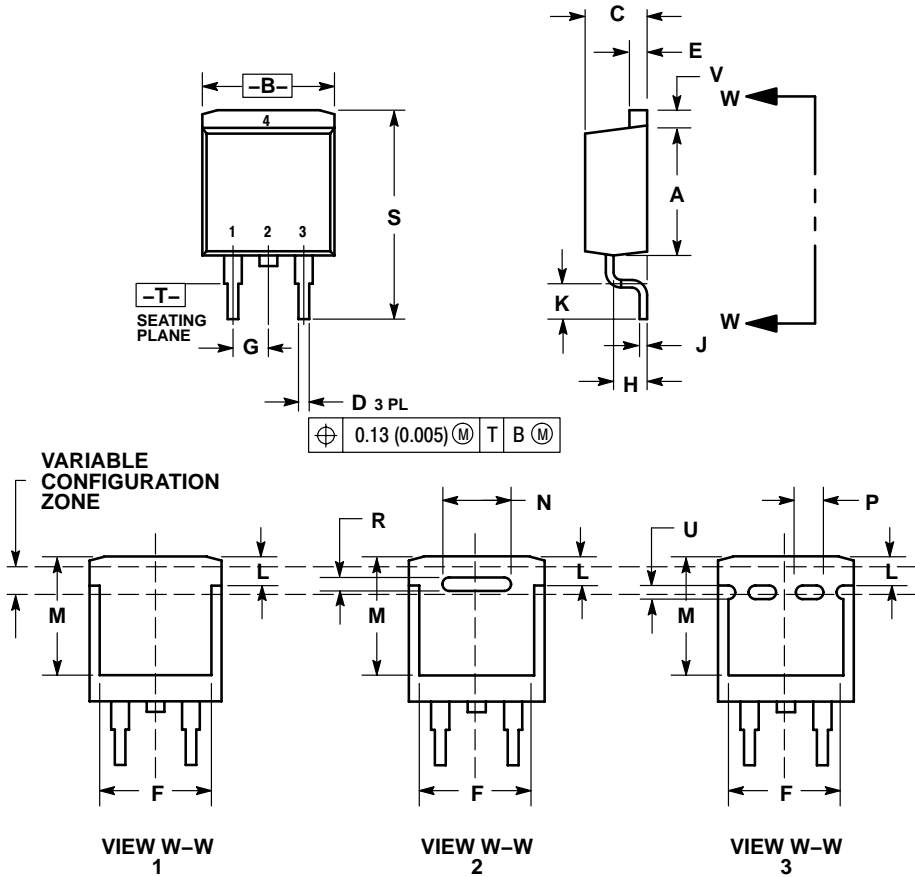


Figure 4. Current Derating, Case

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PACKAGE DIMENSIONS

D²PAK
CASE 418B-04
ISSUE H

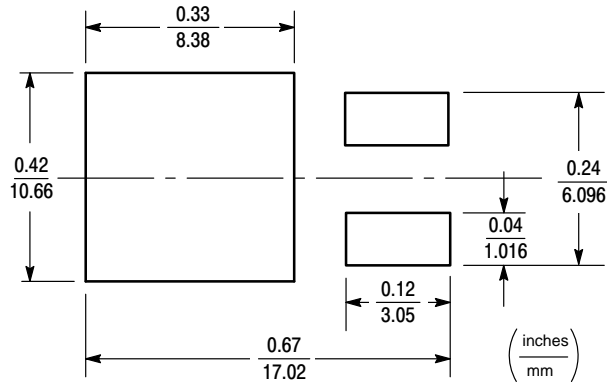


- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.
 3. 418B-01 THRU 418B-03 OBSOLETE, NEW STANDARD 418B-04.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.340	0.380	8.64	9.65
B	0.380	0.405	9.65	10.29
C	0.160	0.190	4.06	4.83
D	0.020	0.035	0.51	0.89
E	0.045	0.055	1.14	1.40
F	0.310	0.350	7.87	8.89
G	0.100 BSC		2.54 BSC	
H	0.080	0.110	2.03	2.79
J	0.018	0.025	0.46	0.64
K	0.090	0.110	2.29	2.79
L	0.052	0.072	1.32	1.83
M	0.280	0.320	7.11	8.13
N	0.197 REF		5.00 REF	
P	0.079 REF		2.00 REF	
R	0.039 REF		0.99 REF	
S	0.575	0.625	14.60	15.88
V	0.045	0.055	1.14	1.40

STYLE 3:
PIN 1. ANODE
2. CATHODE
3. ANODE
4. CATHODE

SOLDERING FOOTPRINT*



*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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